

# Rectal Pouches

## Understanding The Alphabet Of Choices In Rectal Reconstruction

The rectum is a specialized reservoir which provides vital sensory and storage functions for the gastrointestinal system. When diseases such as inflammatory bowel disease, cancer, polyposis or congenital anomalies require the surgical removal of the rectum, an important part of the body is lost. Quite often, these disease processes occur in young patients between the ages of 30 and 45. Physical and emotional adjustments must be made to compensate for this loss. Research has been directed toward finding a suitable replacement for the surgically removed rectum. The major focus of investigation has been on the creation of a neorectum, or rectal pouch.

Initial efforts to reestablish intestinal continuity focused on the creation of a straight anastomotic connection between the terminal ileum (when a total proctocolectomy had previously been performed), and the top of the remaining anal canal. This straight connection, without modification, usually resulted in a sense of fecal urgency, stool frequency of up to 25 unformed bowel movements per day,

or in anal seepage. These debilitating side effects were similar in frequency and severity to those encountered after the creation of a simple end stoma (an ostomy). Postoperative electrolyte imbalances were not uncommon.

During the past 10 to 15 years, our focus has shifted toward restoring intestinal continuity by creating a pouch, or neorectum, and performing an anastomosis to the remaining anal canal. This neorectum serves as a reservoir, substituting for the surgically removed rectum. The results have been excellent and continue to improve.

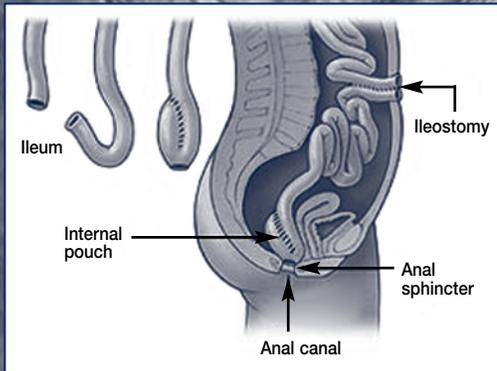
When diseases such as Ulcerative Colitis or Familial Adenomatous Polyposis necessitate a total proctocolectomy, rectal reconstruction is performed by surgically fashioning the terminal ileum into a capacious reservoir.<sup>(1,2,3,4,5)</sup> Although various designs of ileal pouches have been described (J-Pouch, S-Pouch, W-Pouch), the ileal J-Pouch has become the most commonly used



"J" pouch  
Fig. 1



"S" pouch  
Fig. 2



Creating the Ileal Pouch-Anal Anastomosis – Fig. 4

*continued on back...*

...continued from front

configuration because of its simplicity of design, its ease of creation, and its excellent functionality. Figures 1, 2 and 3 show the basic design of these pouches.

When creating a J-Pouch, the terminal 15 to 20 cm. of the ileum is folded onto itself (in the form of the letter "J"). Fusion between the two limbs of ileum is performed using specialized surgical staplers to create a side to side anastomosis. The result is a single, large reservoir or J-Pouch. The base of the newly created J-Pouch may either be stapled or hand-sewn to the remaining cuff of anal canal. The final configuration is termed an ileal pouch-anal anastomosis or IPAA (figure 4). A temporary diverting ileostomy is usually created and used for 6 to 8 weeks while the pouch and the anastomosis heal. Prior to closure of the ileostomy, the pouch may be studied with a radiologic contrast study or 'pouchogram'. Once healing is confirmed, the ileostomy is closed and intestinal continuity is restored.

Recently, research has focused on rectal reconstruction performed after a low rectal resection for a malignant disease process. In the past, the descending colon was directly reconnected to the anal canal. This anastomosis commonly resulted in increased stool frequency and urgency. Attention has been turned toward using the descending colon to form a neorectum. Numerous studies have investigated the use of a colonic-J Pouch, created by fusing the distal 5 cm of the colon onto itself. The hope has been to create a larger, more distensible reservoir. The base of this reservoir is anastomosed to the top of the anal canal, similar to the IPAA. A temporary ileostomy is also created and used while the pouch heals. Studies of this type of configuration have shown improved patient outcomes, with fewer bowel movements per day, less urgency, and better control of rectal continence.

Long-term results have confirmed that the mean number of stools per day is approximately 3, with 1 nocturnal stool per night. Significantly, these stools are formed. Control of



"W" pouch  
Fig. 3

*"...as technology has advanced our ability to operate deeper in the pelvis... the use of the surgically created neorectum has allowed our patients to return to a more normal lifestyle."*

elimination is improved and the amount of seepage has been markedly reduced. This is a tremendous advance over the potentially debilitating large number of daily stools in those patients without a colonic pouch.

The results have not been completely problem-free however. Pouchitis, an inflammation of the reservoir, may occur, and is typically managed with a short course of antibiotics, either metronidazole or ciprofloxacin. Small bowel obstruction occurs in 10% of patients. Anastomotic stricture may occur in 9% of patients and pouch failure has been documented to occur in 3% of patients. However, the need for pouch excision is rare (3%.) While these complications may occur, long-term follow-up in many large studies confirm the excellent functional results and low morbidity rate.<sup>(6,7)</sup>

As technology has advanced our ability to operate deeper in the pelvis, we have been able to offer our patients alternatives to a permanent end colostomy or ileostomy, or the less-than-optimal straight coloanal anastomosis. The use of the surgically created neorectum has allowed our patients to return to a more normal lifestyle. The physical and emotional benefits have been a tremendous boon. With continued focused research, our ability to care for our patients and offer even better alternatives will be further enhanced.

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